

WHAT WE CLAIM IS:

1. Toners of different colors each in which a coloring agent selected from a group consisting of at least yellow, magenta, cyan, and black is internally added to and hydrophobic silica particles and metallic soap particles are externally added to toner mother particles, wherein color superposition of the toners is conducted during development of latent images on a latent image carrier or during transfer to a recording medium after the development, being characterized in that the difference as an absolute value between the work functions of two of said toners is 0.02 eV or more, the color superposition is conducted with the toners sequentially from the toner having the largest work function in descending order of work function of the toners, and the difference as an absolute value between the work function of the toner mother particles and the work function of the metallic soap particles is 0.15 eV or less.

2. Toners as claimed in claim 1, being characterized in that the toners are four unicolor toners of yellow, magenta, cyan, and black, wherein the largest work function among work functions of the toners is in a range of from 5.8 eV to 5.6 eV, the second one is in a range of from 5.7 eV to 5.5 eV, the third one is in a range of from 5.6 eV to 5.4 eV, and the fourth one is in a range of from 5.5 to 5.3 eV.

3. Toners as claimed in claim 1, being characterized in that the work functions of the toner mother particles and the metallic soap particles are in a range of from 5.3 eV to 5.8 eV.

4. Toners as claimed in claim 1, being characterized

in that the work function of the hydrophobic silica particles is smaller than the work function of the toner mother particles.

5. Toners as claimed in claim 1, being characterized in that the toners are single-component non-magnetic toners.

5 6. Toners as claimed in claim 1, being characterized in that the number-mean particle diameter of each toner is from 4.5 μm to 9 μm .

7. Toners as claimed in claim 1, being characterized in that the degree of circularity of each toner is from 0.94
10 to 0.98, wherein the degree of circularity is represented by a ratio L_0/L_1 wherein " L_1 " is the circumferential length (μm) of a projected image of an object toner particle and " L_0 " is the circumferential length (μm) of a perfect circle having the same area as that of the projected image.

15 8. A production method of toners of different colors each in which a coloring agent selected from a group consisting of at least yellow, magenta, cyan, and black is internally added to and hydrophobic silica particles and metallic soap particles are externally added to toner mother particles,
20 wherein color superposition of the toners is conducted during development of latent images on a latent image carrier or during transfer to a recording medium after the development, being characterized in that after the hydrophobic silica particles are externally added to the toner mother particles, metallic
25 soap particles having a work function of which difference as an absolute value from the work function of said toner mother particles is 0.15 eV or less are externally added to the toner mother particles.

9. An image forming apparatus in which electrostatic latent images formed on an image carrier are developed with toners of different colors each in which a coloring agent selected from a group consisting of at least yellow, magenta, cyan, and black is internally added to and hydrophobic silica particles and metallic soap particles are externally added to toner mother particles to form toner images and, after that, the toner images are transferred to a recording medium, wherein color superposition of the toners is conducted during the development of latent images on the latent image carrier or during the transfer to the recording medium after the development, being characterized in that the difference as an absolute value between the work functions of two of said toners is 0.02 eV or more, the color superposition is conducted with the toners sequentially from the toner having the largest work function in descending order of work function of the toners, the difference as an absolute value between the work function of the toner mother particles and the work function of the metallic soap particles is 0.15 eV or less, and the work function of the latent image carrier is larger than the work function of the toner having the smallest work function.

10. An image forming apparatus as claimed in claim 9, being characterized in that the difference (absolute value) between the work function of the latent image carrier and the work function of the toner having the smallest work function is 0.07 eV or less.

11. An image forming apparatus as claimed in claim 9, being characterized in that the work function of the latent

image carrier is from 5.35 eV to 5.6 eV.

12. An image forming apparatus as claimed in claim 9,
being characterized in that the toners are negatively
chargeable toners and the latent image carrier is a negatively
5 chargeable organic photoreceptor so that the image forming
apparatus conducts the reversal development.

13. An image forming apparatus as claimed in claim 9,
being characterized in that the toners are non-magnetic
single-component toners and the feeding amount of each toner
10 at a developing device is controlled to be 0.5 mg/cm^2 or less
by a regulating blade into a thin layer.

14. An image forming apparatus as claimed in claim 9,
being characterized in that the toners are non-magnetic
single-component toners and the amount of each toner developing
15 the image on the latent image carrier is set to be 0.55 mg/cm^2
or less.

15. An image forming apparatus as claimed in claim 9,
being characterized in that the recording medium is a paper
sheet or a synthetic resin film.

20 16. An image forming apparatus comprising a plurality
of latent image carriers for different colors and a feeding
belt for feeding a recording medium, wherein latent images
formed on the latent image carriers are developed with toners,
after that, are transferred to a recording medium on the feeding
25 belt, and then are fixed so as to form a color image, being
characterized in that the latent image carriers are arranged
such that the toners to be used for development are arranged
in descending order of work function of the toners from the

upstream side to the downstream side of the feeding belt so that the development, transfer, and fixing are conducted with the toners in the descending order of work function.

17. An image forming apparatus comprising a plurality
5 of latent image carriers for different colors and a feeding belt for feeding a recording medium, wherein latent images formed on the latent image carriers are developed with toners, after that, are transferred to a recording medium on the feeding belt, and then are fixed so as to form a color image, being
10 characterized in that the latent image carrier for forming a toner image with a black toner is arranged at the most upstream side or the most downstream side of the feeding belt, and the other latent image carriers for forming toner images with the other unicolor toners are arranged in descending order of work
15 function of the toners from the upstream side to the downstream side so that the development, transfer, and fixing are conducted with the toners in the this order.

18. An image forming apparatus as claimed in claim 16,
being characterized in that the toners are non-magnetic single
20 component toners.

19. An image forming apparatus as claimed in claim 16,
being characterized in that the toners are negatively chargeable toners and development devices for conducting reversal development are employed.

25 20. An image forming apparatus as claimed in claim 16,
being characterized in that the latent image carriers are negatively chargeable organic photoreceptors.

21. An image forming apparatus as claimed in claim 16,

being characterized in that the feeding belt disposed inside the image forming apparatus is obliquely arranged relative to the horizontal direction.

22. An image forming apparatus as claimed in claim 16,
5 being characterized in that the toners are non-magnetic single-component toners and are regulated such that the amount of each toner developing the image on the corresponding latent image carrier becomes 0.5 mg/cm^2 or less.

23. An image forming apparatus as claimed in claim 16,
10 being characterized in that the recording medium is a paper sheet or a synthetic resin film.

24. An image forming apparatus as claimed in claim 16,
being characterized in that the peripheral velocity of each development roller is set to be higher than that of each latent
15 image carrier to have a ratio of peripheral velocity of from 1.1 to 2.5, and the rotational direction of the latent image carrier and the rotational direction of the development roller are the same.